



## A fatigue-assisted collision

Time and again, fatigue has been a major factor in marine incidents and the collision described below is a perfect example of the effects of fatigue. It is a matter of sheer luck that more fishermen have not been killed as a result of fatigue-related accidents.

A report on a collision involving a fishing vessel and a bulk carrier off the south coast of Western Australia was released in June 2002 by the Australian Transport Safety Bureau (ATSB). The report, no. 163, highlights the fact that the skipper of the fishing vessel was probably suffering from the effects of chronic fatigue.

The fishing vessel had been detected by the ship just after 0400 and, as it appeared that a collision was likely, the mate on watch on the ship attempted to call the fisherman on VHF to alert him to the danger of a collision. There was no response to the ship's calls on VHF as the fishing vessel's radio was not working. The mate attempted to alert the fishing vessel using the aldis lamp and the whistle, but there was still no response. The fishing vessel maintained its course and speed. Just before the collision, the mate, who had continued to use the ship's whistle to alert the fisherman, ordered the rudder put hard over to starboard. At this point, the skipper of the fishing vessel, who had been in the wheelhouse, heard the ship's whistle and went to the flying bridge where he saw the ship dead ahead. He put the fishing vessel's helm hard over to port, but was unable to prevent a collision. The smaller craft suffered some damage, but there were no injuries to its skipper or two deckhands, both of whom were asleep.

The ATSB report stated that, prior to the collision, the crew of the fishing vessel had spent a busy two and a half months fishing continuously. The skipper had only had four days off in that time. He provided details of his hours of work and his routine was analysed for the possibility of fatigue. The analysis indicated that it was probable that, on the

morning of the collision, the skipper's judgement, actions and situational awareness were severely affected by chronic fatigue.

The report identified the factors contributing to the incident, concluding additionally that:

- The lookout being maintained on the fishing vessel was not adequate or effective
- Loud music being played in the wheelhouse impaired the skipper's ability to maintain an effective lookout.

The report recommended that:

The State and Territory marine regulatory authorities, via the National Marine Safety Committee, and in consultation with the Australian Seafood Industry Council, ensure the safety and welfare of fishing vessel crews by reviewing the minimum manning, crew certification and work practices on Australian fishing vessels with a view to establishing guidelines for the management of crew fatigue.

## Fatigue and its effects

Sleep is a basic human need and a lack of adequate sleep may lead to fatigue.

Fatigue may be described as a reduction in physical and/or mental capability as a result of physical or mental exertion that has the potential to impair most abilities including strength, speed, reaction time, coordination and decision-making.

Fatigue may be acute or chronic.

Acute fatigue can occur in a matter of hours as a result of excessive and sustained mental or physical activity and may be cured by an adequate period of rest or sleep.

Chronic fatigue is experienced when the normal period of rest or sleep is insufficient to restore an individual's working performance to its usual level. Chronic fatigue is subtle and

usually develops over a period of time. Individuals suffering from chronic fatigue perform below their personal best and are often unaware that their performance has been significantly degraded. In the worst cases, chronic fatigue can cause an individual to momentarily sleep at work, while sitting or standing, for what is known as a 'micro-sleep'.

In practice, what this means is that fatigue does not only result in being tired or feeling sleepy. It means that a person's performance is below, often well below, what is normal and that people are not as alert as they think they may be. People may not even recognise that they are suffering from fatigue. Signs and symptoms of fatigue include forgetfulness, avoiding tasks, poor communication, poor decision-making and fixation on a single task.

### Measures to prevent fatigue

While the STCW (Standards of Training, Certification and Watchkeeping for Seafarers) Convention requires Administrations to take measures to prevent fatigue by prescribing hours of rest for seafarers, this convention does not apply to fishing vessels.

The ILO (International Labor Organization) Convention, No. 180, on Seafarer's Hours of Work and the Manning of Ships, for every seagoing ship ordinarily engaged in commercial maritime operations, states that to the extent practicable, 'the competent authority shall apply the provisions of this Convention to commercial maritime fishing'. The convention contains provisions to limit the maximum number of hours of work of a seafarer in a week. It also prescribes the minimum hours of rest in each week. This convention has not yet been ratified by Australia.

### A dangerous profession

According to a report from the United Nations Food and Agriculture Organization (FAO), the fatality rate among fishermen in Australia is 143 per 100 000, compared with the national average of 8.1 per 100 000 for other occupations.

The report notes that one of the major dangers in the fishing industry is fatigue, but that fishing boats tend to be understaffed to maximise profits.

### Keeping a proper lookout

The International Regulations for Preventing Collisions at Sea, 1972, as amended, in Rule 5, states:

Every vessel shall at all times maintain a proper lookout by sight and hearing as well as by all available means appropriate in the prevailing circumstances and conditions so as to make a full appraisal of the situation and the risk of collision.

In addition to ships being required to maintain a proper lookout, skippers of fishing vessels must also ensure that a proper lookout is maintained at all times. The danger of insufficient manning levels is that this can lead to crew fatigue and hence to an ineffective lookout, or none at all, being maintained.

### Other collisions

Since June 1995, the ATSB and its predecessor, the Marine Incident Investigation Unit, have investigated 16 collisions between fishing vessels and trading ships. One collision resulted in the death of the skipper of a trawler.

An ATSB report on a collision between a bulk carrier and a fishing vessel on 2 February 1999 was the eleventh investigation conducted since June 1995 into such incidents. The report mentioned that in nine of those incidents, the fishing vessel had failed to maintain a proper lookout. On two of three fishing vessels at anchor, the crew had gone to bed and no lookout had been maintained. The report also stated that:

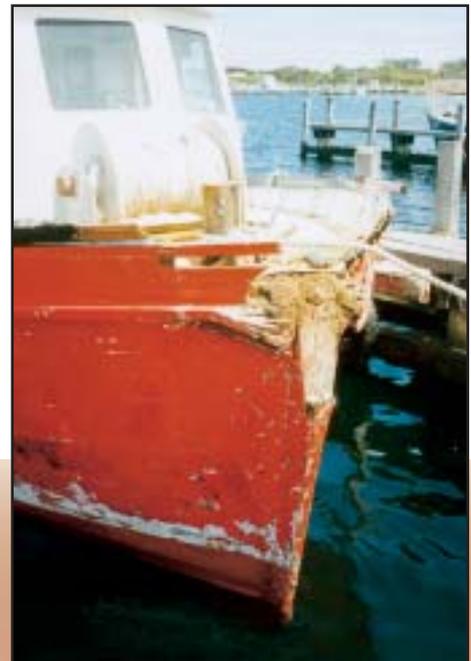
The number of crew typically employed on fishing boats was two or three, which, for a sustained 24-hour operation is insufficient to fish and maintain a proper lookout required by the Collision Regulations.

## Remedial measures

Fishing vessel owners and operators are urged to review the issues of manning and fatigue on their vessels.

They are also urged to take remedial measures to prevent fatigue such as:

- Appropriate scheduling of watches;
- Considering sleep needs when making decisions on crew numbers;
- Avoiding under-manning;
- Using a team approach where possible to prevent a single person's fatigue from impeding safety;
- Not letting other activities intrude on rest and sleep; and
- Ensuring that both the skippers and crews have the opportunity for adequate levels of rest.





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